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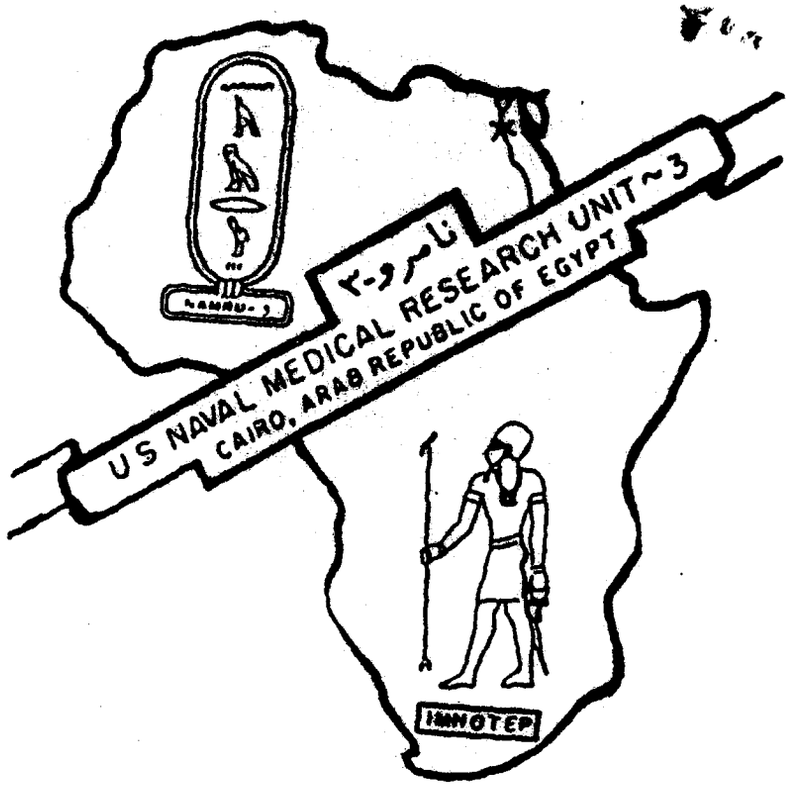

PUBLICATION REPORT

27/94

ABDOMINAL TUBERCULOSIS IN CAIRO,

By

Richard G. Hibbs, M. Kamal and Z. Farid

U.S. NAVAL MEDICAL RESEARCH UNIT NO. 3
(CAIRO, ARAB REPUBLIC OF EGYPT)
PSC 452, BOX 5000
FPO AE 09835-0007

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	8 April 1993	

4. TITLE AND SUBTITLE
Abdominal Tuberculosis in Cairo, Egypt

5. FUNDING NUMBERS
WU 3M162770A870.AR.322

6. AUTHOR(S)
Hibbs Richard, G., Kamal, M., Farid, Z.

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
U.S. Naval Medical Research Unit No. 3
PSC 452, Box 5000
FPO AE 09835-0007

8. PERFORMING ORGANIZATION REPORT NUMBER
27/94

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
Naval Medical Research and Development
Command, National Naval Medical Center
Building 1, Tower 12
Bethesda, MD 20889-5044

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES
Published in: Trans. R. Soc. Trop. Med. Hyg., 88:317-318, 1994; Acc. No. 1793

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release;
Distribution is unlimited.

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

Twenty-two abdominal tuberculosis patients seen at Abbassia Fever Hospital in Cairo, Egypt from January 1990 to August 1992 are described; their mean age was 21.5 years, range 9-54 years; 17 were female. Common symptoms were fever, malaise, abdominal pain (64%) and weight loss (82%). Chest X-rays were normal in 14 patients (64%), but ultrasonography/computerized tomography of the abdomen was abnormal in 20 patients (91%), with adenopathy the usual finding. Anaemia and a raised erythrocyte sedimentation rate were present in all patients, and purified protein derivative skin test (5 Tu) was positive in 82%. Predominant abnormal physical findings were abdominal (86%), including hepatomegaly/splenomegaly and abdominal mass. Diagnosis was made from biopsy material (caseating granulomas) in 6 patients by laparotomy, 1 by laparoscopy, and 3 by cervical or supraclavicular node biopsy; and from laboratory examination of excretions in only 4 patients (acid- fast bacilli in stools of 2, mycobacteria in urine and menstrual fluid). Eight patients required presumptive diagnosis after response to specific isoniazid (+ethambutol) antituberculous therapy.

14. SUBJECT TERMS
Abdominal tuberculosis; Patients; Egypt

15. NUMBER OF PAGES
2

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	

Abdominal tuberculosis in Cairo, Egypt

Richard G. Hibbs[1], **M. Kamal**[2] and **Z. Farid**[1] [1]*US Naval Medical Research Unit No. 3, Cairo, Egypt;* [2]*Abbassia Fever Hospital, Ministry of Public Health, Cairo, Egypt*

Abstract

Twenty-two abdominal tuberculosis patients seen at Abbassia Fever Hospital in Cairo, Egypt from January 1990 to August 1992 are described; their mean age was 21·5 years, range 9–54 years; 17 were female. Common symptoms were fever, malaise, abdominal pain (64%) and weight loss (82%). Chest X-rays were normal in 14 patients (64%), but ultrasonography/computerized tomography of the abdomen was abnormal in 20 patients (91%), with adenopathy the usual finding. Anaemia and a raised erythrocyte sedimentation rate were present in all patients, and purified protein derivative skin test (5 Tu) was positive in 82%. Predominant abnormal physical findings were abdominal (86%), including hepatomegaly/splenomegaly and abdominal mass. Diagnosis was made from biopsy material (caseating granulomas) in 6 patients by laparotomy, 1 by laparoscopy, and 3 by cervical or supraclavicular node biopsy; and from laboratory examination of excretions in only 4 patients (acid-fast bacilli in stools of 2, mycobacteria in urine and menstrual fluid). Eight patients required presumptive diagnosis after response to specific isoniazid (+ethambutol) antituberculous therapy.

Introduction

In the past, abdominal tuberculous (ileocaecal) was one of the commonest forms of extrapulmonary infections, probably due to ingestion of milk contaminated by the bovine tuberculosis bacillus. Primary abdominal tuberculosis accounted for 40% of all forms of tuberculosis among 22 autopsy cases in Sudan (SCHULZE *et al.*, 1977), from whom *Mycobacterium bovis* was isolated only once. A laparoscopy study in Egypt of ascites patients (75% females of child-bearing age) indicated that 9 of 20 isolates from 91 tuberculous peritonitis patients were *M. bovis* (see DAVIES, 1982), indicating that in Egypt ingestion of milk products contaminated with this mycobacterium may still be a relatively common cause of primary gastrointestinal infections.

Abdominal tuberculosis is more common among the lower socioeconomic class, involving fever, weight loss and malnutrition, abdominal pain, abdominal swelling and or mass, elevated erythrocyte sedimentation rate (ESR) and variable response to tuberculin testing (FRANCIS, 1972; JOHNSON & ADERELE, 1979). Among adults, however, abdominal tuberculosis (particularly peritonitis) commonly affects females during their second to fourth (child-bearing) decades and is usually associated with anaemia (SINGH *et al.*, 1969). Autopsy findings have indicated that abdominal tuberculosis is characterized by great enlargement of the intra-abdominal lymph nodes, the commonest manifestation, and that disease sometimes spreads directly to the peritoneum and through the lymphatics to mediastinal lymph nodes, with haematogenous spread leading to involvement of other organs in patients who were usually emaciated (SCHULZE *et al.*, 1977).

Recently, there has been an increase in extrapulmonary tuberculosis in association with the human immunodeficiency virus pandemic and other immunosuppressive disorders (DAVIES, 1982) and, although abdominal tuberculosis is rare in developed countries, the proportion of patients with intra-abdominal tuberculosis disease alone has increased (WEIR & THORNTON, 1985). In developing countries, where tuberculosis is highly endemic, one needs a high index of suspicion in diagnosing abdominal tuberculosis since onset is insidious and manifestations are protean. We report on the findings in 22 patients diagnosed with abdominal tuberculosis.

Materials and Methods

Volunteer patients with either fever of unknown origin (FUO) or with suspected infectious disease diagnoses who are admitted to the Abbassia Fever Hospital, Cairo, Egypt, are prospectively evaluated by the US Naval Medical Research Unit No. 3 (NAMRU-3). Records of patients admitted to the fever ward at Abbassia Fever Hospital, Cairo, Egypt, from January 1990 to December 1992 were retrospectively reviewed because of an apparent increase in diagnoses of abdominal tuberculosis patients seen at this fever hospital, half of whom were diagnosed during the last year. Among 156 FUO patients, 63 (40%) were diagnosed as extrapulmonary tuberculosis. We summarize the findings of 22 of these patients diagnosed with abdominal tuberculosis.

Methods of confirmed diagnosis included culture of mycobacteria or presence of acid-fast bacilli in excretions, or caseating granuloma seen on lymph node biopsy, laparotomy or laparoscopy (at the discretion of the consulting surgeon). Consulting surgeons do not culture biopsy specimens. Presumptive diagnosis was made among those who experienced a rapid response and resolution of symptoms after specific isoniazid (INH)+ethambutol antituberculous treatment. Cultures to distinguish mycobacteria species were unavailable.

Results

Seventeen (77%) patients were females and 5 were males. The patients' ages ranged from 9 to 54 years (mean 21·5). Ten were children <17 years old and 8 of these were females. Sixty percent were females in their second to fourth (child-bearing) decades (i.e., 12–35 years old). The most common presenting symptoms were fever, malaise, abdominal pain (64%) and weight loss (82%), and predominant physical findings were abdominal in 86%, including pain/tenderness in 14 patients, hepatomegaly/splenomegaly in 7 patients and abdominal mass in 5 patients. Lymphadenopathy was a physical finding in only 3 patients (1 cervical, 1 supraclavicular and 1 generalized). Anaemia and an elevated ESR were present in all patients and were important findings suggesting the diagnosis. Tuberculin skin tests using purified protein derivative (PPD, 5Tu) were positive (>10 mm induration) in 18 patients (82%) and negative in 4. Admission chest X-rays revealed hilar lymphadenopathy in 2, peritracheal lymphadenopathy in 2, pulmonary infiltrates in 2 and pleural effusion in 2. Fourteen patients' admission roentgenograms (64%) were considered normal. Ultrasonography or computerized tomography was abnormal in 20 patients (91%), adenopathy being the usual finding (14 patients).

Diagnosis was made by means of positive cultures in 2 patients (one urine and one menstrual blood culture); by demonstration of acid fast bacilli (AFB) in stools of 2 patients; by biopsy material demonstrating caseating granulomas in 10 (cervical or supraclavicular lymph node biopsy in 3, mesenteric lymph node biopsy in 2, para-aortic lymph node biopsy in 1, omentum in 2, and spleen in 2);

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and by clinical presentation and manifestations consistent with presumptive tuberculosis after response to specific anti-tuberculous therapy in 8 patients.

The difficulty of differentiating abdominal tuberculosis from malignant disease was a significant problem in 8 patients. Abdominal sonography and computed tomography (CT) revealed multiple hypo-echoic and hypodense lesions of the spleen resembling splenic lymphoma in 3 patients, and intra-abdominal masses resembling retroperitoneal tumors in 3 other patients. A seventh patient was initially reported as a primary intestinal lymphoma whose barium meal revealed mural thickening, submucosal 'thumb printing' and 'cobble stoning' of the jejunum, ileum and duodenum. In a sixth patient with a history of adenocarcinoma of the sigmoid colon and resection anastomosis, followed 5 months later by fever of 3 months' duration, computed tomography and lymphangiography revealed para-aortic and retrocrural lymphadenopathy suspected to be metastatic retroperitoneal lymph node enlargement. Evaluation by laparotomy and pathological examination of the tissue showed disseminated tuberculosis and no malignancy.

It was difficult to categorize abdominal tuberculosis patients since most had overlapping features. However, based on predominant findings, the categories noted were abdominal (primarily mesenteric) adenopathy (8 patients or 36%), peritonitis (5 or 23%), intestinal (4 or 18%), splenic (3 or 14%) and genitourinary (2 patients or 9%).

Discussion

In countries where tuberculosis is highly endemic, abdominal tuberculosis must be included in the differential diagnosis of complex fevers in both children and adults, particularly when abdominal distension or mass is part of the presenting feature. Normal chest and abdominal X-rays do not rule out abdominal tuberculosis, and barium studies, ultrasonography and CT scanning are often indicated, although non-specific. Biopsy material, frequently requiring laparoscopy (if available) or laparotomy, is often required to isolate the pathogen. An abdominal mass is assumed malignant until proved otherwise and may co-exist with abdominal tuberculosis. Although mortality was previously reported to be 35–40% (GOUDARZI & MASON, 1982; WEIR & THORNTON, 1985), with prompt and early diagnosis and effective therapy cure rates can be high, particularly among child-bearing age females with peritonitis in developing countries (FRASNCIS, 1972; COUDARZI & MASON, 1982; JAKUBOWSKI *et al.*, 1988). Outcome of patients in this series was good or excellent.

The prompt and early diagnosis of abdominal tuberculosis in developing countries, however, remains difficult. Difficulty of diagnosis was notable with 8 patients requiring presumptive diagnosis, 7 patients requiring laparotomy/laparoscopy, 3 requiring cervical node biopsy, and only 4 patients diagnosed by laboratory specimen culture or AFB staining. The difficulty of differentiating abdominal tuberculosis from malignancy was a significant challenge in 8 patients (36%).

The value of ultrasonography and CT scan has been stressed in evaluating patients with suspected abdominal tuberculosis, particularly involving abdomional lymphadenitis (KAPOOR & SHARMA, 1988); their value in patients, particularly women of child-bearing age, with constitutional signs and symptoms including abdominal pain, elevated ESR, anaemia, and a strongly positive tuberculin (PPD) test cannot be overemphasized. Pathological diagnosis is frequently required but therapeutic antituberculous treatment trial may be necessary, particularly in 'Third World' countries.

A limitation of this study is that only records of FUO patients, difficult to diagnose, were screened to select abdominal tuberculosis patients, and we present only a description of a series of such patients. Also, the method of pathological diagnosis, when indicated, was at the discretion of the consulting surgeon or pathologist, who performed histological diagnoses without culturing tissue. Unfortunately, the prevalence of a positive tuberculin test in the general population is still unknown but is high among adults. The diagnosis of abdominal tuberculosis was presumptive in 36%, but all of these patients experienced rapid and complete resolution of illness in response to therapy. The patients described are probably under-representative of the total proportion of FUO patients admitted who have abdominal tuberculosis. In Egypt, the prevalence of tuberculosis caused by ingestion of milk products contaminated by *M. bovis* today is unknown. The importance of culturing all suspect biopsy material as well as laboratory specimens, and obtaining mycobacterium species diagnosis, must be addressed (by cost–benefit analysis) in the diagnosis of complex fever patients in Egypt.

Acknowledgements

This work was supported by the US Naval Medical Research and Development Command, Bethesda, Maryland, USA, Work Unit no. 3M162770A870.AR.322. The opinions and assertions contained herein are the private ones of the authors and are not to be construed as official or as reflecting the views of the US Department of the Navy, US Department of Defense or the Egyptian Ministry of Health.

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Received 8 April 1993; revised 4 August 1993; accepted for publication 18 August 1993